



**DEPARTMENT OF VETERANS AFFAIRS
EASTERN COLORADO HEALTH CARE SYSTEM
1055 Clermont Street
Denver, Colorado 80220
303-399-8020**

April 9, 2018

Michael Boeglin
EPA Region 8
Mailcode: 8ENF-W-NP
1595 Wynkoop Street
Denver, CO 80202-1129

Dear Mr Boeglin:

As requested in your letter (dated March 6, 2018), the Department of Veterans Affairs (VA) Eastern Colorado Health Care System (ECHCS) submits the Findings and Actions Summary Table with the new, transitional Storm Water Management Plan (SWMP) for resolutions to your office's audit and continuation of the permitting process with the EPA Region 8, Stormwater Coordinator (Ms Amy Clark). ECHCS consulted extensively with her in the SWMP's preparation. Please refer any questions to Mr Ray Marsh, Environmental Engineer, at either 303-399-8020, ext. 2613 or Raymond.Marsh@va.gov.

Sincerely,


Sallie A. Houser-Hanfelder, FACHE
Director

Attachments:

1. Findings and Corrective Actions Summary Table
2. NOI and Storm Water Management Plan (SWMP) for Replacement Medical Facility

Attachment 1

Findings and Corrective Actions Summary Table

Finding #/Title: 1PM / The SWMP did not include descriptions of procedures or best management practices used to implement MS4 permit requirements.

Corrective Actions Summary: The SWMP required ongoing revisions for transition to the new Rocky Mountain Regional VA Medical Center (RMRVAMC) to address continuing design changes over a 15 year period until the facility's construction was complete in 2017. Formats for documentation and training were also adjusted, even though very challenging, since extensive changes came with each new landscape design. As noted in the updated SWMP, new Best Management Practices (BMPs) shall address transitional stormwater management issues from the Denver campus to the new RMRVAMC. The current Green Environmental Management Systems (GEMS) Plan (and Appendices) - ECHCS Policy Facility Management Service (FMS)-10, is the framework for SWMP implementation. For the transition, it is now in DRAFT for the new GEMS program at RMRVAMC. Retraining for all BMPs is ongoing due to the change in location.

Finding #/Title: 2PM / The SWMP did not include documentation of education, training and outreach activities across multiple program areas.

Corrective Actions Summary: It's done by software tracking of mandatory computer-based environmental awareness training for thousands of new and existing staff by the Talent Management System (TMS) on the VA's Intranet. When this training is delinquent, the system automatically informs the employee, and then their supervisor, in turn, so training is accomplished as directed. A version of this policy related training is in the SWMP for reference. Continuing updates are through the Education and Training Office when needed.

Finding #/Title: 3PM / Measurable goals for each program area were not contained or referenced in a centralized SWMP document.

Corrective Actions Summary: In the new, centralized SWMP, measurable goals are noted in each BMP's summary by program area. This shall be tracked by the GEMS Program Manager which has the full cooperation of FMS for successful accomplishment.

Finding #/Title: 4PM / The SWMP did not describe the VA Hospital's ordinance and other regulatory mechanisms for implementing several requirements of the NPDES Permit.

Corrective Actions Summary: This can now be found for program areas within the introduction and summary for each BMP. As well as being a weekly inspection regimen for the GEMS Program Manager, Mr. Marsh, he typically contacts the VA Police for enforcement action via citations to federal court upon discovery of illicit discharges. New policies for stormwater management and spill prevention have been under draft review by RMRVAMC implementation.

Finding #/Title: 5PM / The SWMP did not list name and/or title of the person responsible for coordination and implementation of several program areas listed in the NPDES permit.

Corrective Actions Summary: Title of personnel responsible are noted at the beginning of the SWMP. This can now be found for program areas covered by each BMP.

Finding #/Title: 1PE / Educational materials for new employees and the VA Hospital contained minimal information about stormwater pollution.

Corrective Actions Summary: See example training presentation in the SWMP's attachments developed from an EPA Region 8 conference on stormwater management in the Fall 2017 for local agencies. It was more recently updated using the new stormwater and spill prevention management policies.

Finding #/Title: 1PC / The SWMP did not describe the VA Hospital's strategies for selecting and implementing structural and non-structural permanent BMPs.

Corrective Actions Summary: This is summarized in SWMP Section 1.2 Background Notes. Essentially, BMPs are minimal maintenance green infrastructure designed to enhance or blend with the environment; mitigate through infiltration (pervious channels and rock beds); and operate without human intervention (Storm Water Quality Units - SWQUs). The SWQU is an example of a structural BMP. Non-structural BMPs are pervious landscaped drain swales with either grass or rock/stone linings. Periodic cleanings are by FMS.

Attachment 2

Storm Water Management Plan (SWMP)

FORM 1 GENERAL	 U.S. ENVIRONMENTAL PROTECTION AGENCY GENERAL INFORMATION Consolidated Permits Program <i>(Read the "General Instructions" before starting.)</i>	I. EPA I.D. NUMBER <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:5%;">S</td> <td style="width:85%;"></td> <td style="width:5%;">T/A</td> <td style="width:5%;">C</td> </tr> <tr> <td>F</td> <td></td> <td></td> <td>D</td> </tr> <tr> <td>1</td> <td>2</td> <td>13</td> <td>14 15</td> </tr> </table>	S		T/A	C	F			D	1	2	13	14 15																																										
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II. POLLUTANT CHARACTERISTICS INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms .																																																								
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">SPECIFIC QUESTIONS</th> <th colspan="3">Mark "X"</th> <th rowspan="2">SPECIFIC QUESTIONS</th> <th colspan="3">Mark "X"</th> </tr> <tr> <th>YES</th> <th>NO</th> <th>FORM ATTACHED</th> <th>YES</th> <th>NO</th> <th>FORM ATTACHED</th> </tr> </thead> <tbody> <tr> <td>A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)</td> <td></td> <td style="text-align: center;">X</td> <td></td> <td>B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)</td> <td></td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? 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VII. SIC CODES (4-digit, in order of priority)

VIII. OPERATOR INFORMATION

F. CITY OR TOWN															G. STATE		H. ZIP CODE		IX. INDIAN LAND						
Aurora															CO		80045		Is the facility located on Indian lands? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO						
15	16																40	41		42	47		51		52

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

COMMENTS FOR OFFICIAL USE ONLY	
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Storm Water Management Plan



SWMP Prepared For:

Department of Veterans Affairs

Eastern Colorado Health Care System

Greg Lunsford, PE, Chief, Facilities Management Service

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Denver, CO. 80045

(303) 399-8020 x 2604

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SWMP Prepared By:

Eastern Colorado Health Care System

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ACRONYMS

BMP – Best Management Practice
BPJ – Best Professional Judgment
CGP – Construction General Permit
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq*)
DCIA – Directly Connected Impervious Area
ECHCS – Eastern Colorado Health Care System
EPA – U. S. Environmental Protection Agency
ESA – Endangered Species Act
FWS – U. S. Fish and Wildlife Service
IA – Impervious Area
IDDE – Illicit Discharge Detection and Elimination
LA – Load Allocations
MOS – Margin of Safety
MS4 – Municipal Separate Storm Sewer System
MSGP – Multi-Sector General Permit
NAICS – North American Industry Classification System
NEPA – National Environmental Policy Act
NHPA – National Historic Preservation Act
NMFS – U. S. National Marine Fisheries Service
NOI – Notice of Intent
NPDES – National Pollutant Discharge Elimination System

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NRC – National Response Center
NRHP – National Register of Historic Places
NSPS – New Source Performance Standard
NTU – Nephelometric Turbidity Unit
OMB – U. S. Office of Management and Budget
ORW – Outstanding Resource Water
PCP – Phosphorus Control Plan
POTW – Publicly Owned Treatment Works
RCRA – Resource Conservation and Recovery Act
RMRVAMC – Rocky Mountain Regional Veterans Affairs Medical Center
RQ – Reportable Quantity
SHPO – State Historic Preservation Officer
SIC – Standard Industrial Classification
SPCC – Spill Prevention, Control, and Countermeasure
SWMP – Stormwater Management Program
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
TSS – Total Suspended Solids
USGS – United States Geological Survey
WLA – Wasteload Allocation
WQRP – Water Quality Response Plan
WQS – Water Quality Standard

DEFINITIONS

Best Management Practices (BMPs) - schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Control Measure - refers to any BMP or other method (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

Director - a Regional Administrator of the Environmental Protection Agency or an authorized representative.

Discharge - when used without qualification, means the "discharge of a pollutant."

Discharge of a pollutant - any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works.

Discharge-related activities - activities which cause, contribute to, or result in stormwater and allowable non-stormwater point source discharges, and measures such as the siting, construction and operation of BMPs to control, reduce, or prevent pollution in the discharges.

Existing Discharger – an operator applying for coverage under this permit for discharges covered previously under an NPDES general or individual permit.

Facility or Activity - any NPDES "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

Federal Facility – Any buildings, installations, structures, land, public works, equipment, aircraft, vessels, and other vehicles and property, owned by, or constructed or manufactured for the purpose of leasing to, the federal government.

GEMS Program Manager – Green Environmental Management System (GEMS) Environmental Engineer; environmental compliance officer for the location.

Impaired Water – A water is impaired if it does not meet one or more of its designated use(s). For purposes of this permit, 'impaired' refers to categories 4 and 5 of the five part categorization approach used for classifying the water quality standards attainment status for water segments under the TMDL program. Impaired waters compilations are also sometimes referred to as "303(d) lists". Category 5 waters are impaired because at least one designated use is not being supported or is threatened and a TMDL is needed. Category 4 waters indicate that at least one designated use is not being supported but a TMDL is not needed (4a indicates that a TMDL has been approved or established by EPA; 4b indicates other required control measures are expected in result in the attainment of water quality standards in a reasonable period of time; and 4c indicates that the non-attainment of the water quality standard is the result of pollution (e.g. habitat) and is not caused by a pollutant. See *USEPA's 2006 Integrated Report Guidance, July 29, 2005* for more detail on the five part categorization of waters [under EPA National TMDL Guidance <http://www.epa.gov/owow/tmdl/policy.html>]).

Industrial Activity - the 10 categories of industrial activities included in the definition of "stormwater discharges associated with industrial activity", as defined in CFR § 122.26(b)(14)(i)-(ix) and (xi).

Industrial Stormwater - stormwater runoff associated with the definition of "stormwater discharges associated with industrial activity."

Junction Manhole - For the purposes of this permit, a junction manhole is a manhole or structure with two or more inlets accepting flow from two or more MS4 alignments. Manholes with inlets solely from private storm drains, individual catch basins, or both are not considered junction manholes for these purposes.

Key Junction Manhole - For the purposes of this part, key junction manholes are those junction manholes that can represent one or more junction manholes without compromising adequate implementation of the illicit discharge program. Adequate implementation of the illicit discharge program would not be compromised if the exclusion of a particular junction manhole as a key junction manhole would not affect the permittee's ability to determine the possible presence of an upstream illicit discharge. A permittee may exclude a junction manhole located upstream from another located in the immediate vicinity or that is serving a drainage alignment with no potential for illicit connections.

Municipal Separate Storm Sewer - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;

(ii) Designed or used for collecting or conveying stormwater;

(iii) Which is not a combined sewer; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

New Source - any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced:

- after promulgation of standards of performance under section 306 of the CWA which are applicable to such source, or

- after proposal of standards of performance in accordance with section 306 of the CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

New Source Performance Standards (NSPS) – Technology-based standards for facilities that qualify as new sources under 40 CFR 122.2 and 40 CFR 122.29.

No exposure - all industrial materials or activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff.

Owner or operator - the owner or operator of any "facility or activity" subject to regulation under the NPDES program.

Person - an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Point source - any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant - dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal and agricultural waste discharged into water.

Pollutant of concern – A pollutant which causes or contributes to a violation of a water quality standard, including a pollutant which is identified as causing an impairment in a State's 303(d) list.

Reportable Quantity Release – a release of a hazardous substance at or above the established legal threshold that requires emergency notification. Refer to 40 CFR Parts 110, 177, and 302 for complete definitions and reportable quantities for which notification is required.

Runoff coefficient - the fraction of total rainfall that will appear at the conveyance as runoff.

Significant materials - includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

Small Municipal Separate Storm Sewer System (a.k.a. "Small MS-4") – means all separate storm sewer systems that are (i) owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under federal law such as a sewer district, flood control district, or drainage district, or similar entity or an Indian tribe or an authorized Indian tribal organization or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States. (ii) Not defined as "large" or "medium" municipal separate storm sewer system pursuant to paragraphs 40 CFR 122.26 (b)(4) and (b)(7), or designated under paragraph 40 126.26(a) (1)(v). (iii) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. This term does not include separate storm sewers in very discrete areas, such as individual buildings.

Small MS4 – means a small municipal separate storm sewer system.

Stormwater - stormwater runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Discharges Associated with Construction Activity - a discharge of pollutants in stormwater runoff from areas where soil disturbing activities (e.g., clearing, grading, or excavating), construction materials, or equipment storage or maintenance (e.g., fill piles, borrow areas, concrete truck washout, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located. (See 40 CFR 122.26(b)(14)(x) and 40 CFR 122.26(b)(15).

Stormwater Discharges Associated with Industrial Activity - the discharge from any conveyance that is used for collecting and conveying stormwater and that is directly related to manufacturing,

processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under Part 122. For the categories of industries identified in this section, the term includes, but is not limited to, stormwater discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to stormwater. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with stormwater drained from the above described areas. Industrial facilities include those that are federally, State, or municipally owned or operated that meet the description of the facilities listed in Appendix D of this permit. The term also includes those facilities designated under the provisions of 40 CFR 122.26(a)(1)(v).


Total Maximum Daily Loads (TMDLs) - A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's sources. A TMDL includes wasteload allocations (WLAs) for point source discharges; load allocations (LAs) for nonpoint sources and/or natural background, and must include a margin of safety (MOS) and account for seasonal variations. (See section 303(d) of the Clean Water Act and 40 CFR §130.2 and §130.7).

Water Quality Impaired – See 'Impaired Water'.

Water Quality Standards: A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses. States and EPA adopt WQS to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (See CWA sections 101(a)2 and 303(c)).

1 BASIC SWMP INFORMATION

CERTIFICATION AND NOTIFICATION: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Sallie-Hansen-Hamfeldt Title: Director, VAECHCS
Signature:  Date: 4-25-18

This stormwater management program planning document was developed by ECHCS to describe the activities and measures that will compliantly be implemented in urbanized areas to meet the terms and conditions of its Permit COR042008. VA Eastern Colorado Health Care System is a Joint Commission accredited, complexity level 1A facility, covering more than 44,000 sq. miles, serving Veterans in eastern Colorado and surrounding states. The existing VA Medical Center is located in Denver, Colorado, and a replacement facility is nearing completion in Aurora (a.k.a. "Rocky Mountain Regional VA Medical Center" or "RMRVAMC"), with Community Based Outpatient Clinics located throughout Colorado: Alamosa, Aurora, Golden, Colorado Springs, Pueblo, La Junta, and Lamar. For the next year, both facilities will operate in tandem to support one of the fastest growing populations of veterans in the country. RMRVAMC medical campus has a total 12 new buildings, including a conventional hospital facility, 2 inpatient treatment facilities, 2 new and 1 renovated clinical care buildings, a central plant building, 3 parking structures, a rehabilitation facility, a medical research facility and a central concourse. In total, the new and renovated square footage was approximately 1,250,000 square feet and an additional 1,200,000 square feet for the parking structures. Soil disturbing activities were some existing building demolition; clearing and grubbing; installing erosion and sediment controls; grading; mass excavation; installation of building foundations; structure backfill; installation of below grade utilities; parking lots; and installation of post-construction controls including final landscaping. There are Primary Care Telehealth Outreach Clinics in Burlington and Salida. VAECHCS also collaborates in a joint venture DoD ambulatory surgical center at the Air Force Academy, 10th Medical Group in Colorado Springs, Colorado. VA ECHCS, DoD and VBA partner in an Integrated Disability Evaluation System (IDES) Center at Fort Carson. VAECHCS has one Community Living Center (CLC) which is a 40 bed CLC in Pueblo, CO. Additional freestanding healthcare sites include the Jewell Polytrauma and Low Vision Clinic, the Homeless Domiciliary at Valor Point, and the Community Resource and Reference Center (CRRCC). VAECHCS has a strong academic affiliation with the University of Colorado, supports more than 164 medical residents, and trains over 400 allied health professionals. VAECHCS has over \$23.1 million in funded research and 158 principal investigators. Stormwater compliance at off-campus facilities is maintained by building owners from which the VA leases its facilities. VA off-campus, leased facilities do not maintain ownership of the grounds and compliance, in turn, is enforced by ECHCS. Outdoor storage facilities exist for gasoline (250-gallon, double-contained aboveground storage tank) and

sealed and properly marked barrels of chemicals, as well as locked cabinets for additional hazardous materials storage. Small tractors used for snow removal may be, at times, stored outside. Four regulated underground storage tanks for diesel fuel are also present on the property next to the Energy Center. Other oil (non-PCB) storage locations for lubrication and cooling are used for hydraulic elevators. All floor drains internal to the facility's structures release to the sanitary sewer. Other facility activities with the potential to impact storm water include:

- The underground storage tanks are filled once a year or as needed.
- A non-liquid, electrical snow-melt system is installed under most pavements around the campus to reduce the amount of snow-melt emulsion applied.

VA staff regularly maintains the grounds and remove trash, and perform other functions as needed. These daily activities include:

- Facilities Management Services (FMS) starts cleaning of the dock area which includes sweeping and using the pressure hose to rinse the area. All trash and debris on the ground in and around the loading dock are collected daily.
- FMS makes rounds of the medical facility and collects all trash bags at all entrances, and so on. Parking garage trash is collected in the afternoon daily or as needed.
- The garages are detailed Monday, Wednesday, and Friday. Stairwells and hardstands are cleaned as needed.
- The high-efficiency gravel/oil traps at the parking garages are typically cleaned every other year and inspected by FMS at the time of the cleanings.

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1.1 SWMP STAFF ORGANIZATION

- a. **Chief, Facilities Management Service** has overall responsibility for enacting and enforcing the SWMP.
- b. **GEMS Program Manager** will provide technical assistance and information, conduct SWMP inspections, and maintain permits and records as required by the SWMP.
- c. **Safety Manager** will audit records on a periodic basis and provide consultation in regards to the safety of the Best Management Practices (BMPs) implemented under the SWMP.
- d. **Employees** shall perform their duties in a manner consistent with the regulations and the SWMP.
- e. **Contracting Officer Representatives (CORs)** shall monitor contractors and ensure that contractors perform all services in a manner consistent with the regulations and the SWMP.

1.2 RECEIVING WATERS AND DRINKING WATER SOURCES

The waterbodies identified in Table 1 receive stormwater discharges from ECHCS MS4.

Table 1 Point of Discharge ID	Name of receiving water:	Is the receiving water impaired (on the CWA 303(d) list)?	If yes, list the pollutants that are causing the impairment:	Has a TMDL been completed for this receiving waterbody?	If yes, list TMDL Name and ID:	Pollutant(s) for which there is a TMDL:	Is this receiving water designated as a Tier 2, Tier 2.5, or Tier 3 water?	If yes, specify which Tier (2, 2.5, or 3)?
[001]	Toll Gate Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	See "Background Notes"		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA
[002]	Toll Gate Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	See "Background Notes"		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA
[003]	Toll Gate Creek	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	See "Background Notes"		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	NA

Background Notes

No stream flows will be diverted, and there are no wetlands or springs on the campus site. The SWMP is designed to contain normal flows of storm water within sediment basins. After flowing into one of three (3) stormwater quality units (SWQU) around the campus, stormwater would then be discharged to the City of Aurora storm sewer system along Fitzsimons Parkway. Water from the storm sewers will discharge into Toll Gate Creek, which flows into Sand Creek, which is a tributary of the South Platte River. Sand Creek is one of the two major tributaries into the South Platte River within Segment 16h which is the mainstem of West Toll Gate Creek, including all tributaries and wetlands, upstream of the confluence with East Toll Gate Creek. Segment 16h flows into Segment 16i which includes the mainstem of Sand Creek from the confluence with Toll Gate Creek to the confluence with the South Platte River. This facility is not within the Cherry Creek or Aurora Reservoir Drainage Basins.

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In regard to the existing Denver VAMC watershed area, ECHCS' MS4 discharges into Denver's MS4, which is covered under Colorado Department of Public Health and Environment (CDPHE) Discharge Permit System Municipal Storm Water Discharge Permit No. COS000001. Storm water originating at ECHCS flows underground from the site boundary northward until 16th Avenue where it flows westward. At City Park, the flow joins the City Park Storm Sewer, a 114-inch, 3-ring brick pipe. This, in turn, discharges to the South Platte River, a water of the United States. The City and County of Denver does not maintain the ECHCS MS4. There is no storm water run-on from areas outside the ECHCS property and there is no runoff from the property. ECHCS' MS4 is composed of several curb and gutter drains and catch basins that are connected underground. All storm water originating from the property is discharged through a single underground pipe at approximately Hale Parkway and Belaire Street. Data for the MS4 of the existing Denver VAMC (DVAMC) can be found in the attachments as noted in the Table of Contents.

RMRVAMC Soils, Slopes, Vegetation and Current Drainage Patterns

The geotechnical report indicates the soils and conditions are:

- Existing surface conditions – large existing asphalt parking lots, landscaped areas and some abandoned landscaped areas.

- **Subsurface soils** – The subsurface conditions are expected to generally consist of natural lean clay and granular overburden soils extending to bedrock at depths ranging from about 27 to 43 feet below existing ground surface. The deeper overburden soils immediately overlying the bedrock were predominately granular while the upper portions of the overburden soils consisted primarily of lean clays containing varying amounts of sand and occasional lenses of clayey sand. The fill typically consisted of slightly moist to moist, brown to dark brown, lean clay with sand to sandy lean clay to clayey sand. Ground water is anticipated at depths ranging from approximately 31 to 43 feet below ground surface.
- **Hydrologic soil group** – The subsurface material underling the construction site is classified as Weld-Deertrail with loam, clay, and silty loam over alluvial gravels. Weld-Deertrail soils are generally considered well drained, but clay layers can be encountered which range from moderately low to moderately high (.06 to .20 in/hr.) permeability. At the lowest areas of the deep excavations bedrock will be encountered which will be composed of interbedded claystone, siltstone, sandstone and conglomerate deposits. The characteristics of this material will exhibit low permeability.
- **Slopes** - The existing site is essentially flat with a slight overall downward slope to the north. The maximum grade change across the site is approximately 13 feet. A storm water swale and detention basin, and a separate minor depression, are located near the south end of the site and an approximate 5 foot grade break occurs along the property boundary in the northeast portion of the site along Fitzsimons Parkway.

Description	Result	Location of Occurrence
Highest Elevation:	5385	NE Corner of Site
Lowest Elevation:	5372	SE Corner of Site
Steepest Slope:	4%	NE Corner Grade Break
Average Slope:	.9%	Across Site

- **Drainage Patterns** – The current slope is toward the center of the overall site and new detention ponds, area inlets, rain gardens and gravel catchments. Near the perimeter of the site, the slope is off the site, particularly along the east side. Stormwater runoff flows from the perimeter of the site in an easterly direction to the City of Aurora municipal separate storm sewer system (MS4) on Fitzsimons Parkway, and then to Sand Creek.
- When significant rainfall occurs, storm water at grade will be diverted to surface catchments and then through Storm Water Quality Units (SWQU - CONTECH Model 3020) at 3 key locations (southwest intersection of Fitzsimons Pkwy and E. 17th Place; northwest intersection of 17th Place and Fitzsimons Pkwy, and west side of new campus adjacent to the loading dock on south Wheeling St) where on and off-site storm sewers connect.
- Here's the general SWQU process from manufacturer's data: "Stormwater enters the diversion chamber where the diversion weir guides the flow into the unit's separation chamber and pollutants are removed from the flow. All flows up to the system's treatment design capacity (48.97 cfs / 120 year storm recurrence) enter the separation chamber and are treated. Swirl concentration and screen deflection force floatables and solids to the center of the separation

chamber where 100% of floatables and neutrally buoyant debris larger than the screen apertures are trapped. Stormwater then moves through the separation screen, under the oil baffle and exits the system. The separation screen remains clog free due to continuous deflection. During the flow events exceeding the treatment design capacity, the diversion weir bypasses excessive flows around the separation chamber, so captured pollutants are retained in the separation cylinder." At a minimum, periodic annual maintenance shall be accomplished to keep the units free of debris.

- The site is generally flat, but slopes slightly from the North/South centerline of the campus toward the east and west sides. The campus has pervious drainage swales installed between buildings to promote runoff water away from the buildings and through landscaped areas. Near the perimeter of the site, the water is routed to inlet structures and then discharged to the SWQU's prior to entering the City of Aurora's municipal separate storm sewer system.
- Non-structural and structural BMP selection - Non-structural BMPs maintain open space, and use landscape features to manage stormwater. Structural BMPs function without intervention during wet weather for passive treatment. In the case of RMRVAMC, BMPs are a combined approach of pervious landscape (rocks or grass) and areas between facilities (swales, cobble and rock lined channels). An overall intent behind the BMPs was infiltration while aesthetically blending with their surroundings (such as pervious cobble lined channels and rock-blankets around the bases of each building). Placement of SWQU's was for further pollutant capture before the city's MS-4.
- Previous Site Use – The site was previously a part of the Fitzsimons Army Hospital. Several of the Army Base buildings such as the Credit Union, Pool and Barracks were compliantly remediated of Asbestos Containing Materials (ACM) and lead based paint, demolished, and removed from the site in their entirety from Calendar Year 2009 to 2011. An environmental assessment of the site was performed by the Department of Veterans Affairs in 2006.

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2 ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT

The MS4 operated by ECHCS evaluated if listed threatened or endangered species and critical habitat are present within the MS4 urbanized area. To determine eligibility, the ECHCS assessed the potential effects of the MS4 known storm water discharges and discharge-related activities on listed species or critical habitat. The ECHCS determined that it meets eligibility under Criterion A.

No ESA-listed species and/or designated critical habitat was likely to be present in the action area. Also, the Environmental Assessment (EA) from 2006 for the new VA campus in Aurora also noted that the action area had "no habitat for federally listed threatened or endangered species, or any other special status species is known to occur within the project area, or were any threatened or endangered species found...".

Content from these websites current at the time of the SWMP submission was again reviewed and found consistent with the previous statement from the EA (2006):

<https://www.fws.gov/endangered/map/state/CO.htm>

<https://www.fws.gov/mountain-prairie/es/endangered.php> ;

<https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=CO> ;

<https://birdsna.org/Species-Account/bna/species/leater1/introduction>

3 HISTORIC PROPERTIES

Any activity that occurs has the potential to unearth a variety of historical artifacts both prehistoric and historic in nature. If subsurface cultural items are uncovered during construction activities, all work will cease in accordance with Standard VA Construction policy, and professional archeology assistance would be obtained to evaluate the finds. Work practices to consider are closely monitoring mechanical soil excavations and any other ground disturbing activities for cultural materials that may be revealed. During the EA (2006) process for RMRVAMC, no historic facilities were found on the property.

Currently, the existing Denver VAMC consists of 17 buildings building constructed between 1951 and 2002, including a main hospital, canteen/medical building, a 60 bed nursing home (Building 38), research space and various administrative and support buildings. In addition, a seven and a half story parking structure was completed in 2002. There are approximately 604,000 square feet of buildings situated on a site of nearly 13 acres. At the time this report was written, the VAMC property was not currently listed on the NR, nor had it been formally designated as historic on the National Register; however, if this changes then additional considerations may be needed.

4 MAP OF SEPARATE STORM SEWER SYSTEM

As required by Permit COR042008, a copy of the new ECHCS storm sewer system map is included in Attachment I. Others from the existing Denver VAMC can also be found there for reference.

5 CONTROLS FOR TARGETING POLLUTANTS OF CONCERN

5.1 CONTROLS FOR EXISTING DISCHARGES TO IMPAIRED WATERS WITH TMDLS

This section not complete since it was not applicable to RMRVAMC conditions because there's no impaired or TMDL waters.

5.2 CONTROLS FOR EXISTING DISCHARGES TO IMPAIRED WATERS WITHOUT TMDLS

Control Measure	BMP WOTMDL1-Runoff Sampling Perform sampling at each of 3 on-campus stormwater connections before it enters the City of Aurora (COA) MS-4 for baseline measurements of contaminants such as E. Coli.
Measurable Goal:	Perform initial baseline measurement of "as-constructed" and "after-constructed" conditions within 1 year after campus opens for patients.

Person(s) or Department Responsible:

GEMS Program Manager

Control Measure

BMP WOTMDL2-Bacteria Reduction

Feces (both animal and human) and deceased vectors must be removed as soon as found since they may introduce bacteria into runoff resulting from either in-house or contract construction activities. There's also an infection control risk from their presence. Vectors must be verified as non-endangered species prior to application of measures. Some coordination with wildlife agencies is expected to inform them of the concern and request guidance. Regularly inspect locations typical of where this waste can be found such as utilities areas where flying vectors may roost or nest. Non-flying vectors such as insects and rodents may be where there are containers with trash. Prevention and mitigation measures must be done by State licensed vendors.

Measurable Goal:

Removal of feces and deceased vectors within 1 day of discovery.

Person(s) or Department Responsible:

FMS Maintenance and Repair-Grounds

Control Measure

BMP WOTMDL3 – Pest Control

Proactive squab (pigeon) vector controls by family of raptors noted nesting within high points of RMRVAMC.

Measurable Goal:

Reduction in roosting of live squab within campus boundaries to reduce amounts of feces.

Person(s) or Department Responsible:

GEMS Program Manager

Control Measure

BMP WOTMDL4-Source Runoff Contaminant Reduction

Prevent contaminants from entering runoff going into storm sewers during precipitation events. Continue green-procurement activities to find environmentally friendly (non-toxic) snow-melt compounds.

Measurable Goal:

Weekly visual observation (and associated documentation) of exterior horizontal and vertical surfaces shows less presence of contaminants. Limit snow-melt compound use to areas only with steady foot-traffic to reduce applied amounts. Sweep up unused compound where possible.

Person(s) or Department Responsible:

FMS Maintenance and Repair-Grounds and GEMS Program Manager

Control Measure

BMP WOTMDL5– Mitigation of Contaminants in Runoff

Prevention and/or mitigation in release of sediment and other contaminants (e.g. snow-melt compounds, nutrients, oils/greases) to stormwater flows coming from the campus during known soil disturbing activities.

Measurable Goal:	Visual observation for color changes of runoff in gutters and outfall during and after precipitation events. Observe for soil disturbance before precipitation events and ensure stabilizations are in place.
Person(s) or Department Responsible:	FMS Maintenance and Repair-Grounds, GEMS Program Manager, Contractors/Government construction management personnel

6 LEGAL AUTHORITY AND ENFORCEMENT

Control Measure	BMP LA1 – Maintain Adequate Legal Authority Maintaining current enforcement mechanisms such as VA Police, GEMS Program Manager for prevention and control of illicit on-site discharges to RMRVAMC campus stormsewer system in accordance with applicable stormwater regulations.
Measurable Goal:	Zero enforcement actions taken on-campus and reporting of any observed off-campus illicit discharges to appropriate authorities having jurisdiction.
Person or Department Responsible:	Chief, Facilities Management Service, VA Police, and GEMS Program Manager

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Control Measure	BMP LA2 – Develop Stormwater Management Policy In accordance with this policy, any suspected illicit discharge should be reported to the police dispatcher and/or GEMS Program Manager immediately. Campus command center has entire perimeter under video surveillance so illicit discharges can be spotted during routine daily surveillance patrol operations. This is NOT a permit compliance mechanism, but only supplemental direction as required by the VHA.
Measurable Goal:	Within 1 year, continue educating employees in stormwater awareness and watching for illicit discharge; provide written campus stormwater management policy.
Person(s) or Department Responsible:	VA Police, Facilities Management Service-Grounds, GEMS Program Manager

7 CONTROLS TO REDUCE POLLUTANTS TO THE MAXIMUM EXTENT PRACTICABLE

The following sections describe ECHCS's program to reduce pollutants from the discharge of pollutants from the MS4 to the maximum extent practicable. As necessary, the sections describe partnerships that ECHCS is using to implement various BMPs. For purposes of this minimum measure, the "public" in the ECHCS's MS4 is defined as consisting of employees, contractors, and

visitors (or patients). Education and outreach on stormwater impacts will focus on employees and contractors because visitors have a negligible potential for impact to the MS4 and are onsite infrequently. Education activities are generally on-going. Education activities include but are not limited to: Training related to grounds equipment maintenance & cleaning, Annual SPCC training for all oil handling personnel, Hazardous and universal waste training annually for appropriate employees, Stormwater training for ECHCS contractors as required, General employee education and training for all new employees, Storm drain labeling – label 100% of storm drains. There have been 3 connections to the Aurora MS4 determined (intersections of Wheeling St/E. 17th Place, E17th Place/Fitzsimons Pkwy and 17th Avenue/Fitzsimons Place). All mix with the Aurora MS-4 after leaving the RMRVAMC's system; however, they enter separate SWQUs prior to the mixing point. There are no known sanitary sewer overflows found on the RMRVAMC campus after physical and asbuilt inspections were completed by FMS and GEMS Program Manager.

7.1 PUBLIC EDUCATION AND OUTREACH

For purposes of this measure, the “public” in the ECHCS’s MS4 is defined as consisting of employees, contractors, and visitors (or patients). Since MS-4 implementation in 2003, available statistics for new employee and contractor outreach are consistent with changes in the number of patients seen system-wide. Exact statistics for contractor personnel are not available, but are generally tracked by the number of active projects in any given fiscal year. At this time, environmental awareness training on MS-4 and other compliance related topics is part of several different trainings (such as “ECHCS Environment of Care”, “ECHCS Emergency Management-Decontamination Spill Prevention and Remediation” and “ECHCS Infection Control”) to save patient care time while informing. In addition to this training, further information is provided on the GEMS webpage for ECHCS for the employee’s mandatory review concerning stormwater issues common to ECHCS facilities:

<http://vaww.vishn19.portal.va.gov/sites/echcs/safety/gems/federalenvironmentalcompliancecetraining>

These are the current statistics for the numbers of employees reached with information relation on the MS-4 requirements:

FISCAL YEAR	# ATTENDED NEW EMPLOYEE ORIENTATION (NEO)
2014	503
2015	780
2016	710
2017	566

Control Measure

BMP PE1 – Public Education

Education and outreach on stormwater impacts will focus on employees and contractors because visitors have a negligible potential for impact to the MS4 and are onsite infrequently. Education activities are generally on-going.

Measurable Goal: Annual 100% completion of Environment of Care (EOC) and GEMS environmental awareness training by the public. Show successful training implementation has occurred by attendance records.

Person or Department Responsible: GEMS Program Manager, Designated Learning Officer (DLO)

7.2 PUBLIC INVOLVEMENT

Control Measure **BMP PE2 – Stormdrain Labeling within Limits of VA Property**

As the MS4's public that has the greatest potential impact on stormwater is employees and contractors, public involvement and participation is related to job descriptions and contracts. Additionally, labeling of stormwater drains is a BMP that can enhance public awareness and participation at the ECHCS. This includes annual "Dumpster Days" and "Employee Wellness Events" which focus, in part, on stormwater pollution prevention.

Measurable Goal: Storm drain labeling (100% of storm drains within the limits of VA property) within 1 year of SWMP implementation.

Person or Department Responsible: Facilities Management Service-Grounds, GEMS Program Manager

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7.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION

Control Measure **BMP IDDE1 – Employee Illicit Discharge Detection & Response Training**

Inform employees of what an illicit discharge is and establish communication, coordination, cooperation, and collaboration activities as part of SPCC training.

Measurable Goal: Show 100% successful annual training implementation has occurred with appropriate documentation.

Person or Department Responsible: VA Police, Facilities Management Service-Grounds, GEMS Program Manager

Control Measure **BMP IDDE2 – Outfall Screening, Prioritization and Sampling**

Develop procedures that clearly describe a reasonable approach to outfall screening, including thresholds that trigger an action when a sample exceeds a certain value. Accessibility is through a confined space to possible sampling points.

Measurable Goal:	The screening and sampling procedures will be developed within one year. During years 3-5 of the permit, the campus will screen at least 1/3rd of all outfalls each year during dry weather.
Person(s) or Department Responsible:	GEMS Program Manager
Control Measure	BMP IDDE3 – Statement of Program Responsibilities Provide stormwater management policy for the new campus. Find compliant policy example from another VA medical center and tailor it to fit ECHCS.
Measurable Goal:	Within 1 year of hospital opening, provide written policy.
Person(s) or Department Responsible:	GEMS Program Manager
Control Measure	BMP IDDE4 –Revise Storm Sewer Map Using as-built civil drawings, provide updates as needed where either VA or City of Aurora (COA) construction make changes to the MS-4.
Measurable Goal:	On a recurring basis at times when changes to MS-4 identified, both VA and COA exchange information.
Person(s) or Department Responsible:	GEMS Program Manager

7.4 CONSTRUCTION SITE STORMWATER CONTROL

The vast majority of the construction activities at RMRVAMC consist of interior remodeling projects. However if exterior construction projects occur that contain the potential to impact stormwater runoff, the contractor will be required to obtain and be responsible for the appropriate construction storm water permit in compliance with the SWMP. This is also part of the NEPA review process as well as a formal submittal to GEMS as part of each contract package after award for review should there be any anticipated impact on stormwater by a project.

Control Measure	BMP CONS1 – Erosion and Sediment Control BMP Standards This is already part of the hospital's construction contract compliance documentation. Copies of this are provided to the GEMS Program Manager for written review with each project.
Measurable Goal:	Ensure contractor compliance with the following minimum BMPs:

- **Fiber Rolls BMP**
 - Installation Instructions:
 - Place rolls into trench 3 inches deep.
 - Place excavated soil on uphill or flow side of the roll.
 - Rolls should be abutted at the ends, not overlapped.
 - Alternate stakes on both sides of the roll, every six inches.
- **Silt Fences BMP**
 - Always align silt fences along the natural contours of slopes.
 - If silt fences divert and concentrate flow, they only make the problem worse.
 - To be effective, silt fences must disrupt the flow of runoff.
 - For steep hillsides.
 - Bury filter fabric at least 4 inches below the ground surface
 - Position 2 - 5 feet from the base of the slope
 - Backfill with dirt or gravel 6 - 8 inches deep
- **Construction Entrance BMP**
 - A very significant source of discharge is tracking mud from construction site entrances.
 - Use rock or an approved metal grate.
 - Easy BMP to manage.
- **Stockpile Management BMP**
 - BMPs to prevent wash-out of piled soil, and
 - Concrete wash-out containment
- **Storm Drain Protection BMP**
 - BMPs to prevent mud or muddy water from entering storm drains.
 - Must be kept clean.
- **Solid Waste Management**
 - Construction waste shall be recycled and tracked in accordance with the contract documents.

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**Person(s) or
Department
Responsible:**

GEMS Program Manager

Control Measure

BMP CONS2 – Plan Review Procedures

Measurable Goal:

This is for review of new projects done on the exterior of the facility which will be disturbing soil and is over 1 acre.
Review 100% of projects which will disturb soil and be over 1 acre.

**Person(s) or
Department
Responsible:** GEMS Program Manager

Control Measure **BMP CONS3 – Inspection and Enforcement Procedures**

Weekly inspections shall be done on the stormwater system using a checklist.

Measurable Goal: When, and if, deficiencies are found, they're reported to the VA authority having jurisdiction within 1 work day of identifying the issue.

**Person(s) or
Department
Responsible:** GEMS Program Manager

7.4.2 Employee Training

Training shall be provided and documented to all applicable VA personnel, contractors, and sub-contractors, after a contract is awarded and documented as part of the submittal process. Employees receive this training as part of their initial orientation and then annual on-line training requirement via the hospital's Talent Management System (TMS). On an as needed basis, the GEMS Program Manager is requested to provide this training to Services as well as during the quarterly GEMS Committee Meeting. Training consists of the following: Identify/location of storm drains; Contents of a Storm Water Management Plan; Spill prevention and cleanup procedures; Activities which may result in contaminants (oil, fuel, chemicals, debris) flowing down the storm sewer or on ground surface (40. CFR 112). The initial training is provided each month to all new employees ("New Employee Orientation"), and documented through the TMS.

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7.4.3 Construction Site Inventory

Most of the construction activities consist of interior remodeling projects. However if exterior construction projects occur that contain the potential to impact stormwater runoff, the contractor will be required to obtain and be responsible for the appropriate construction storm water permit. This permit includes the following BMPs as appropriate: Construction sequencing, land grading and dust control; Construction entrances and vehicle maintenance & storage areas; Temporary drains, silt control, storm drain protection, and diversions; Sediment controls and traps, and construction site waste management; and Contractor stormwater BMP self-inspection programs. These BMPs, and others, are referenced in the campus master Storm Water Pollution Prevention Plan (SWPPP).

Control Measure **BMP CONS7 – Develop a Current Construction Site Inventory**
Developed from active FMS construction projects list provided by Facilities Improvement Section from applicable projects equal to or greater than 1 acre.

Measurable Goal: As required, provide active construction project site list.

**Person(s) or Department
Responsible:**

FMS Facilities Improvement Section and GEMS Program Manager

7.5 STORMWATER MANAGEMENT IN DEVELOPMENT AND REDEVELOPMENT (POST CONSTRUCTION AND FOLLOW-ON MAINTENANCE)

The following BMPs will be the responsibility of the Facilities Management Service: Promoting infiltration through landscaping practices; These are tracked electronically as part of the medical center's preventive maintenance program.

Control Measure: **BMP SDR1 – Promoting infiltration through landscaping practices**

This includes in-house RMRVAMC efforts to prevent rainfall from reaching roadways and parking lots; Re-directing downspouts to pervious surfaces when possible; and recurring BMP inspection and maintenance both before and after rainfall events.

Measurable Goal: In review of contract documents for applicable projects, ensure BMPs are meeting the intent of the control measure noted.

**Person(s) or
Department
Responsible:**

Facilities Management Service-Grounds, GEMS Program Manager

Control Measure: **BMP SDR2 – Maintenance of Post-Construction BMPs (e.g. Stormwater Quality Units and Oil-Water Separators)**

Maintain an inventory of BMPs, and a recurring maintenance schedule for cleaning.

Measurable Goal: Follow-on reviews for compliance with completion of periodic maintenance as well as physical inspections.

**Person(s) or
Department
Responsible:**

Facilities Management Service-Grounds, GEMS Program Manager

7.6 POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR CAMPUS OPERATIONS

7.6.1 Storm Sewer System Map

These Storm Utility Section Maps show the major components of the Storm Sewer System infrastructure within the RMRVAMC campus. The maps are divided into individual sections because of the size of the datasets involved. The major datasets shown on the maps include storm mains, manholes, culverts, outfalls, catch basins and connections with Aurora's MS-4. The mains shown are located by line assignments referenced from property lines, easements, as-builts, and utility rights-of-way. Specific property line information is generally not shown, but is included as part of the boundary survey filed with the city. There are no anticipated changes to the storm drainage on the south parcel which is bounded by E 17th Place, Fitzsimons Pkwy, Wheeling St and Colfax Ave. However, various projects funded, and approved, several years before the facility was turned over to the VA are now starting

construction on the north parcel which is bounded by E. 19th Place, E. 17th Place, Wheeling St and Fitzsimons Pkwy. The US Army Corps of Engineers reportedly processed drainage permits directly with regulatory bodies through their Contractor, Kiewit-Turner, in advance of these projects and continue to remain their point of contact through the performance period.

7.7 STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

The action of developing a site, can result in replacing existing permeable areas with impervious surfaces, such as buildings, parking lots, and sidewalks. Increasing impervious surfaces have the effect of increasing stormwater runoff and consequently can increase the potential of carrying pollutants into surface waters, if no compensation or mitigation measures are implemented. Green Infrastructure is our approach to water management that protects, restores, and mimics the natural water cycle and includes techniques implemented to mitigate or compensate for increased impervious surfaces. Green Infrastructure techniques include increasing infiltration with onsite measures, such as vegetated swales, increasing landscape to paved area ratios, and pervious river-rock lined channels.

7.8 POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR OPERATIONS

7.8.1 Operations and Maintenance (O&M) Programs

These are the general stormwater BMPs for implementation by FMS in-house and contractor workforces at the new campus (and associated locations, as appropriate):

- **Post Construction BMP**
 - Verify placement of structural measures
 - Verify accumulation of sediment, or signs of sediment escape, does not appear outside the construction entrance or perimeter.
- **Cleaning dumpster areas, loading docks, or any paved surfaces**
 - Control litter - Dumpsters are to be cleaned regularly; repair leaking dumpsters immediately. If you must wash down a dumpster, loading dock or other outdoor surface for health reasons, use dry cleanup methods first, and then rinse, collect water, and discharge to the sink or indoor floor drain.
- **Cleaning up spills(non-hazardous)**
 - Control the spill, then sweep or clean up with absorbent pads and granular absorbents. Dispose absorbents to trash, then mop and collect water, put down mop sink, or indoor floor drain.
- **Cleaning up hazardous materials**
 - Control the spill, then sweep or clean up with pads, booms, and granular absorbents. Dispose of absorbents into used absorbents can, then mop up and collect liquid, put liquid into specific barrel, DO NOT put into drain or sink, but send residue and absorbents to a hazardous waste disposal site.
- **Cleaning EMS equipment**
 - Clean inside floor cleaner maintenance area NOT to the street or storm drain.

- **Maintaining cooling towers and refrigeration equipment**
 - Make sure all discharges go to the sanitary sewer and NOT to the street, storm drain, or creek.
- **Landscaping and garden maintenance**
 - Control erosion. Keep yard waste out of the street and storm drain. Use chemicals sparingly, and never in wet weather.
- **Vehicle washing**
 - GSA fleet is washed at an offsite commercial facility. Washing of Grounds equipment on-site is prohibited.

7.8.2 Operations and Maintenance Programs

Control Measure	BMP PP1 – MS4 O&M Procedures
	FMS and contractor implementation of BMPs in Para 7.8.1.
Measurable Goal:	Verify ongoing implementation of BMPs in Para 7.8.1.
Person(s) or Department Responsible:	FMS Maintenance and Repair-Grounds, GEMS Program Manager

7.8.3 Stormwater Pollution Prevention Plans

The SWPPP for the new facility is attached for reference, and was developed to provide flexible coverage for immediate Contractor implementation.

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7.8.4 Employee Training

This is training for those whose primary job duties are related to implementing the MS-4 operation and maintenance programs: good housekeeping and pollution prevention, MS4 maintenance, integrated pest management, vehicle/equipment maintenance procedures, identify/location of storm drains, contents of Storm Water Pollution Prevention Plan (SWPPP), spill prevention and cleanup procedures, management of activities to prevent contaminants (oil, fuel, chemicals, debris) from flowing down the storm sewer or onto ground surface. This training is tracked by supervisors.

8 PROGRAM EVALUATION

8.1 ANNUAL COMPLIANCE EVALUATION

This will be summarized in the Annual Reports to EPA Region 8 as well as inspected weekly by the GEMS Program Manager using the attached observation and compliance checklist shown.

- a. **Public Education and Outreach on Stormwater Impacts:** For purposes of this minimum measure, the “public” is defined as consisting of employees, contractors, and visitors (or patients). Education and outreach on stormwater impacts will focus on employees and contractors because visitors have a negligible potential for impact to the MS4 and are onsite infrequently. Education activities are generally on-going. Education activities include but are not limited to:

- Training related to grounds equipment maintenance & cleaning
- Annual SPCC training for all oil handling personnel,
- Hazardous and universal waste training annually for appropriate employees,
- Stormwater training for ECHCS contractors as required,
- General employee education and training for all new employees,
- Storm drain labeling – label 100% of storm drains

b. **Public Involvement/Participation:** Public involvement and participation is related to job descriptions and contracts. Additionally, labeling of stormwater drains is a BMP that can enhance public awareness and participation at the ECHCS:

- Storm drain labeling (100% of storm drains)

c. **Illicit Discharge Detection and Elimination:** Eliminating and detecting illicit discharges is the responsibility of both the facilities maintenance and police services. At the VAMC Denver both the Federal Police and Safety Department will monitor the facility for illicit discharges. Any suspected illicit discharge should be reported to the police dispatcher or Safety manager immediately. The following are related to this measure:

- Label storm drains
- Control wastewater connections (prevent cross-connections)
- Prevent illegal dumping (police educated in stormwater awareness and lower risks through access control and monitoring of the facility).

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d. **Construction Site Storm Water Runoff Control:** The vast majority of the construction activities at the ECHCS consist of interior remodeling projects. However if exterior construction projects occur that contain the potential to impact stormwater runoff, the contractor will be required to obtain and be responsible for the appropriate construction storm water permit. This permit may include the following BMPs as appropriate:

- Construction sequencing, land grading and dust control,
- Construction entrances and vehicle maintenance & storage areas,
- Temporary drains, silt control, storm drain protection, and diversions,
- Sediment controls and traps, and construction site waste management
- Contractor self-inspection programs

e. **Post-Construction Stormwater Management in New Development and Redevelopment:** The following BMPs will be the responsibility of the Facilities Management Service:

- Promoting infiltration through landscaping practices
- Intercept rainfall from reaching roadways and parking lots,
- Re-directing downspouts to pervious surfaces when possible,
- BMP inspection and maintenance.

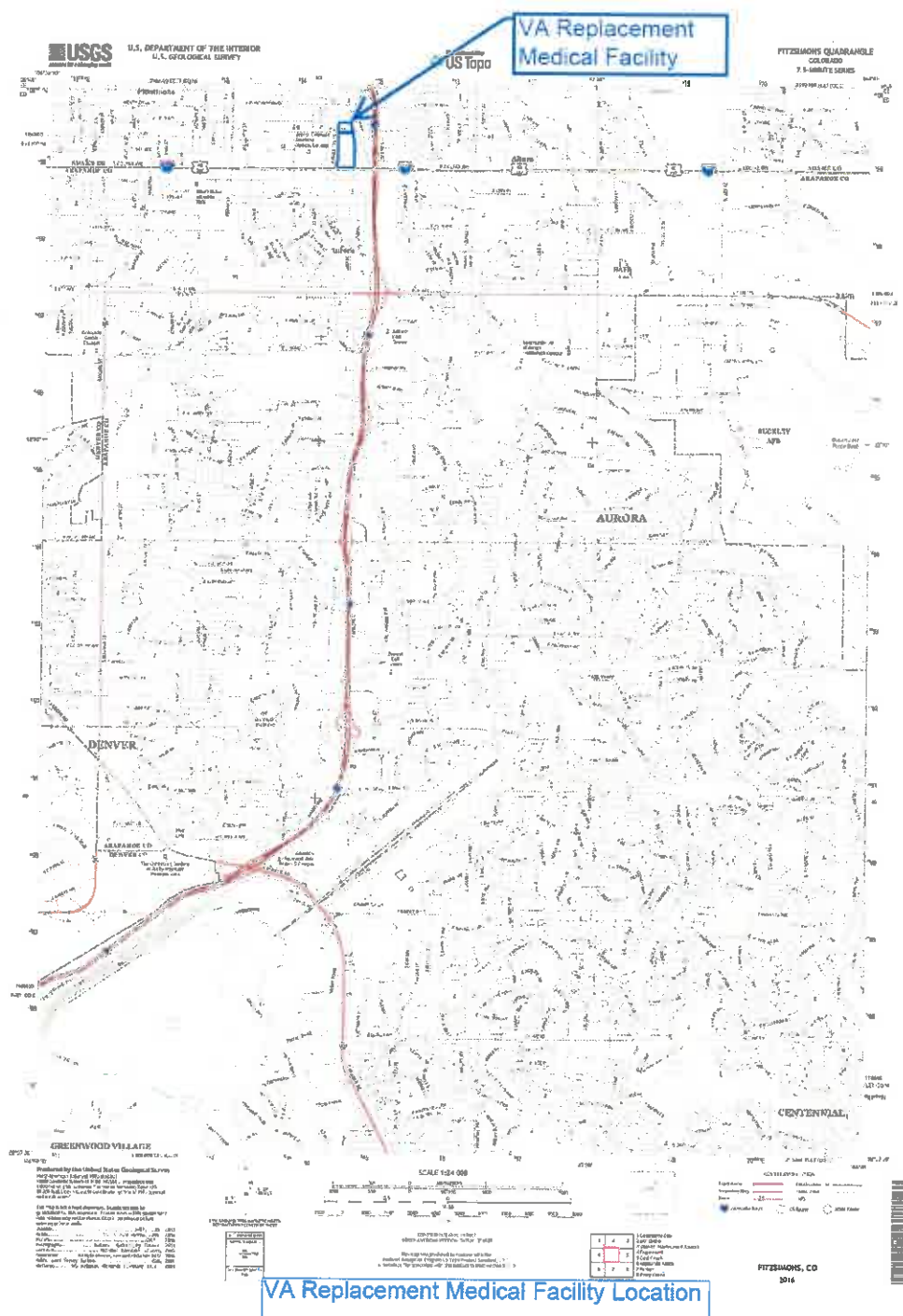
f. **Pollution Prevention/Good Housekeeping for Municipal Operations:** Pollution prevention is considered the primary method of prevention at the ECHCS against stormwater pollution. Ensuring that wastes and materials are properly handled and stored, that VA vehicles are properly maintained, that petroleum, oils and lubricants are managed correctly is paramount in preventing stormwater pollution. BMPs include:

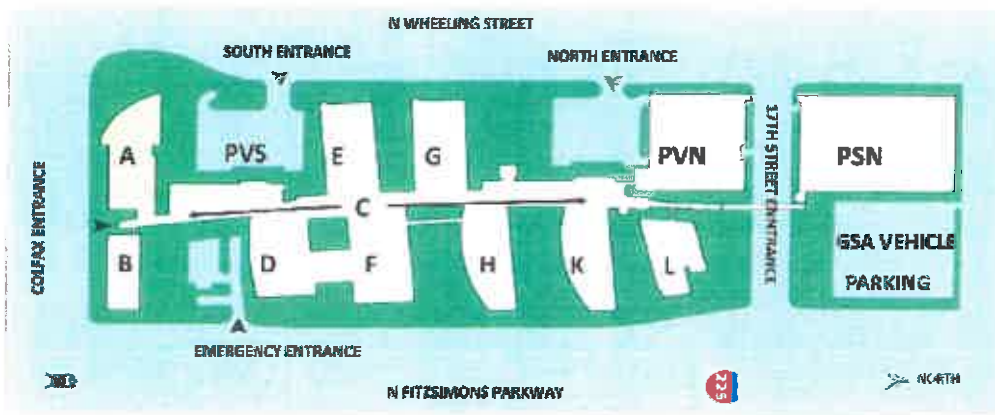
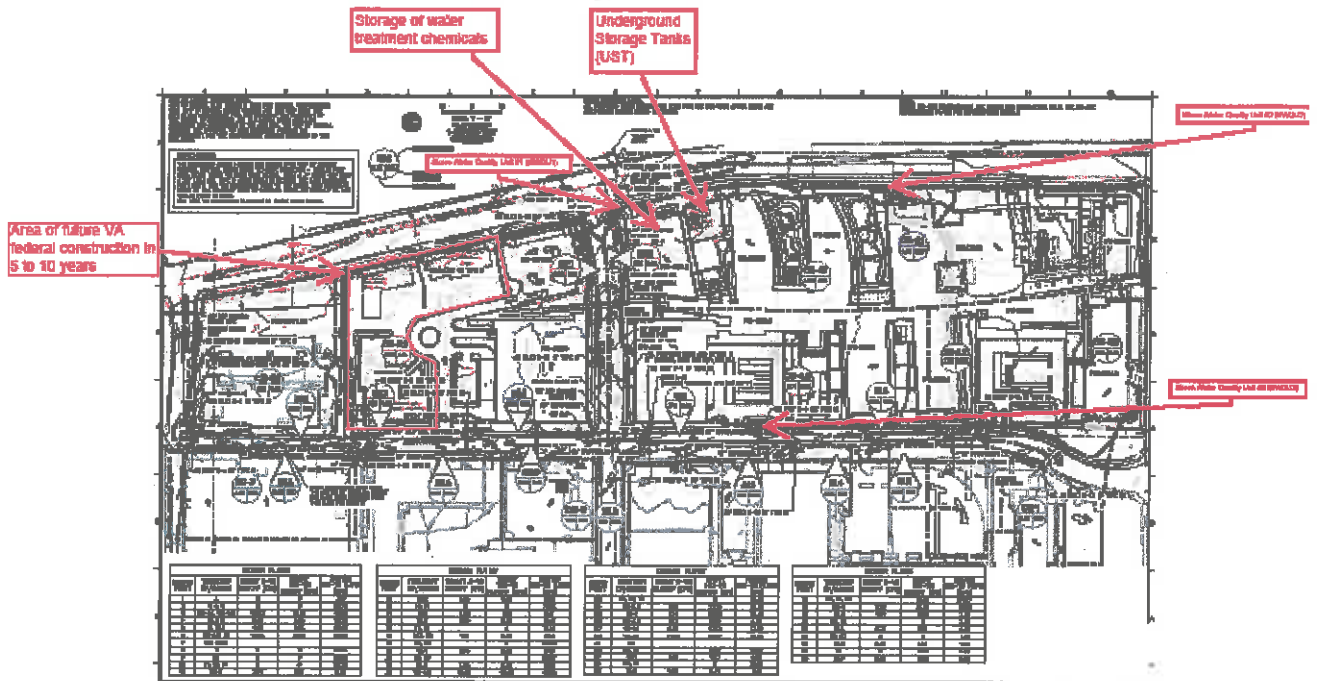
- Ensuring a facility SPCC plan is both current and implemented,
- Hazardous materials and hazardous wastes are stored properly,
- Vehicles are properly maintained and not allowed to “leak”,
- General “Good Housekeeping” is maintained,
- Grounds stormwater “walk through” inspections are done periodically by the GEMS Program Manager during SPCC inspections.

8.2 BMP MODIFICATION

This is tracked for reference in the FMS preventive maintenance program for the Grounds Shop.

4/6/2018



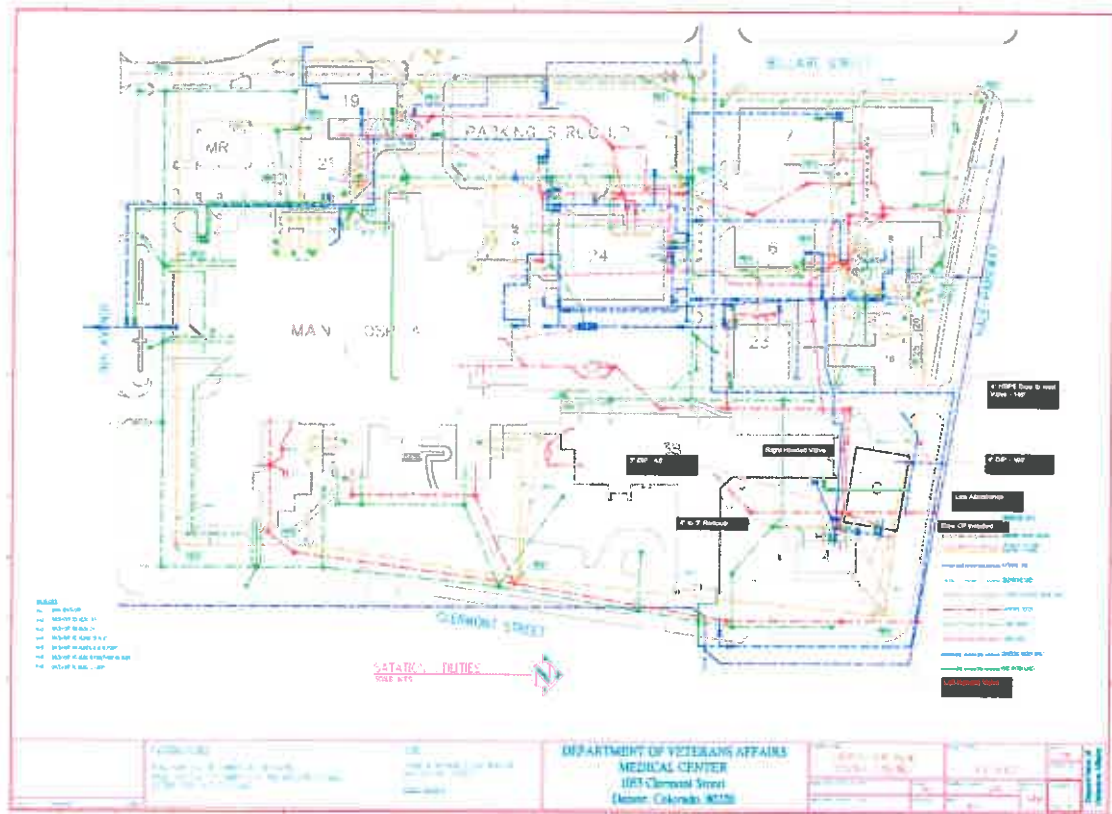


THE ROCKY MOUNTAIN REGIONAL VA MEDICAL CENTER

- Building A—South Clinic
- Building B—Research
- Building C—Concourse
- Building D—Diagnostic & Treatment South
- Building E—Central Clinic
- Building F—Diagnostic & Treatment North
- Building G—North Clinic
- Building H—Inpatient South
- Building I—Energy Center
- Building K—Inpatient North
- PSN—Parking Visitor South
- PVN—Parking Visitor North
- PSN—Parking Staff North

General Stormwater Information for Denver VAMC

Facility Information (Denver)	
Facility's Legal Name	Department of Veterans Affairs Eastern Colorado Health Care System (ECHCS)
Mailing Address	1055 Clermont Street Denver, CO 80220
Telephone No.	(303) 399-8020
Contact Information	
Contact Name	Ray Marsh
Contact Phone No.	(303) 399-8020 ext. 2613
Facility Characteristics	
Area of Land that Drains to ECHCS' MS4 (square	0.02
Latitude and Longitude (of center of MS4 Area)	Latitude: 39°43'57" N Longitude: 104°46'07" W
Names of waters in the U.S. that receive discharges from the MS4	South Platte River
New Facility Information (RMRVAMC-Aurora)	
Facility's Legal Name	Department of Veterans Affairs Eastern Colorado Health Care System (ECHCS) Rocky Mountain Regional VA Medical Center (RMRVAMC)
Mailing Address	13611 E. Colfax Ave. Aurora CO 80045
Telephone No.	(303) 399-8020
Contact Information	
Contact Name	Ray Marsh
Contact Phone No.	(303) 399-8020 ext. 2613
Facility Characteristics	
Area of Land that Drains to ECHCS' MS4 (acres)	35
Latitude and Longitude (of center of MS4 Area)	Latitude: 39°44'34"° N Longitude: - 104°49'47" ° W
Names of waters in the U.S. that receive discharges from the MS4	Tollgate Creek



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ATTACHMENT II MS4 STORMWATER INSPECTION FORM

MS4

ECHCS Stormwater Inspection

[Report all spills immediately]

		YES	NO	COMMENTS
1.	Are drain grates free of debris accumulation?			
2.	Are storage areas near drains enclosed or covered from the rain?			
3.	Is material processing areas near drain enclosed or covered from the rain?			
4.	Are parking areas or access roads free of signs of excess oil and/or motor fluids, leaks, stains, litter, and sediments?			
5.	Are vehicles and heavy equipment stored outside free of leaks and grime?			
6.	Are dry cleaning methods used to clean shop floors, material processing areas, storage areas, access roads, and parking lots?			
7.	Are wash water and/or process waste water discharged to sanitary sewer or recycled instead of discharged directly or indirectly to the storm drain system?			
8.	Are storm drain inlets and catch basins inspected and mechanically cleaned on a regular schedule?			
9.	Are storm drains stenciled to alert public not to pollute			
10.	Are trash dumpsters located next to drains free of cracks to prevent leakage of fluids?			
11.	Do trash dumpsters have lids?			

Additional Comments:

Completed by: _____ Date: _____

ATTACHMENT III CORRECTION ACTION FORM

GEMS-10-F.01		VA Eastern Colorado Health Care System (ECHCS) Green Environmental Management System (GEMS) Corrective / Preventative Action Form (CPAF)	
FACILITY SECTION: Building	CPAF NO (PT-SERIAL NO): REF NO: ECHCS PMS-10282(2), Environmental Stewardship	CPAF TYPE: GEMS	DATE OPENED: BY:
DESCRIPTION OF WORK PERFORMANCE <input type="checkbox"/> OR OBSERVATIONS <input type="checkbox"/>			
ACTIONS TO BE TAKEN (Consider the Following): <div style="display: flex; justify-content: space-between; font-size: small;"> <div> 1. Timely action(s) and/or extent of problem; 3. Timeliness for subject compliance; 5. Accessible paths </div> <div> 2. Action to eliminate the non-conformance or non-compliance; 4. Action to prevent recurrence </div> </div>			
APPROVED BY: <input type="checkbox"/> Service Chief <input type="checkbox"/> Supervisor <input type="checkbox"/> GEMS DATE: As noted		ASSIGNED TO: RESPONSE DATE:	EXPECTED COMPLETION DATE:
VERIFICATION OF CORRECTIVE ACTION IMPLEMENTED AND EVIDENCE OF EFFECTIVENESS			
DATE VERIFIED: As noted	BY: Ray Marsh	DATE CLOSING: As noted	

ATTACHMENT IV SITE PHOTOS



Recessed surface inlet in center of cobble lined pervious catchment at the PVN northwest corner on Wheeling St



Pervious gravel catchment on north side of the CBS adjacent to Wheeling St



Northwest of PSN looking south across entrance circle to Wheeling St with pervious gravel catchment in center



North of PSN looking northeast to Fitzsimons Parkway across grass with recessed inlet in Lower right corner



North side of RES at cobble lined pervious open channel on east side of new campus



East side @ DAT with typical scupper roof drain outlet ("cow tongue") to hardpan surface inlet



"Cow-tongue" to cobble lined pervious channel with SWQU manhole to the south at DAT near Emergency Entrance



East side @ Fitzsimons Pkwy with cobble lined pervious channel and surface inlet with under walk pipe culvert



SWQU manhole to east of surface inlet on Fitzsimons Pkwy and then to Aurora MS4



East side @ RES with cobble lined Pervious channel next to intersection of E Colfax Ave and Fitzsimons Pkwy



West Side @ PVN with SWQU manhole south of intersection of E. 17th Place and Wheeling St.

ATTACHMENT V STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

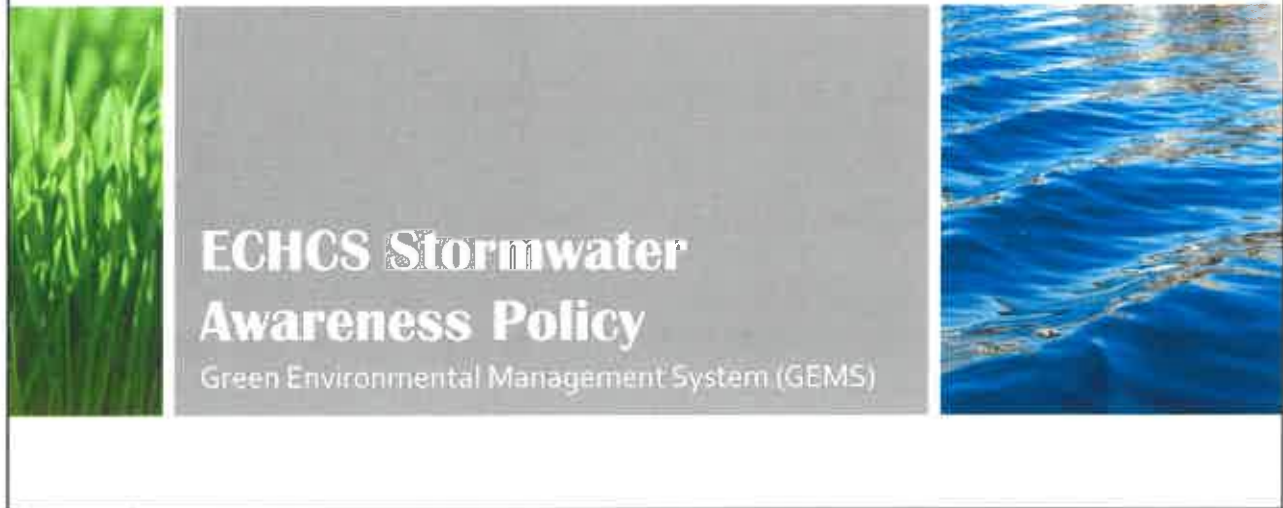


SWPPP Aurora.docx

ATTACHMENT VI ECHCS STORM WATER POLICY TRAINING



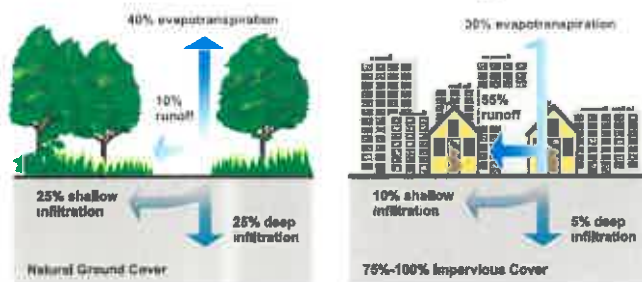
ECHCS Stormwater
Awareness Policy.pp



What is Stormwater?

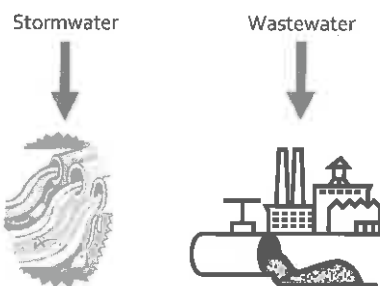
- Stormwater is precipitation (rainwater) that originates during a storm event.
- Rainwater that does not soak into the soil and grass is called stormwater surface runoff. This stormwater runs off impervious covers such as roofs, streets, parking lots, concrete, etc.

More impervious cover = more runoff
Not good



Where Does it Go?

- Stormwater runoff flows toward storm drains and into a system of underground piping
- Stormwater runoff flows directly into our creeks and rivers, **untreated and unfiltered**



1. CHS Stormwater Awareness Training



Stormwater Runoff: The Dirty Truth

- Stormwater runoff contributes to problems in water quantity (flooding) and water quality (pollution)
- Unfiltered stormwater can have contaminants and bacteria such as:
 - Oil and gasoline
 - Fertilizers
 - Pesticides
 - Soil
 - Soap
 - Grass clippings
 - Litter
 - Pet waste
 - Cigarette butts



The only thing that should go down storm drains is clean rainwater!

1. CHS Stormwater Awareness Training

South Platte River

The South Platte River is our treasured water for recreation...



What's Wrong With This Picture?



Due to contaminants in the water, the oxygen amount is low, and this fish cannot breathe. These can be sediment particles, litter, fertilizers, pesticides, herbicides, or any other physical or chemical contaminate that should not be in stormwater runoff.

What's Wrong With This Picture?



Leaves/yard waste that is not disposed of properly (bagged up and/or composted) can end up in storm drains and result in plugging of the storm drain system and pollution of the river.

© 2017 City of St. Louis, Missouri, Department of Public Works

What's Wrong With This Picture?



Bulky waste left on the side of the road can contribute to stormwater pollution.

© 2017 City of St. Louis, Missouri, Department of Public Works

What's Wrong With This Picture?



Unstabilized soil at this site lead to sediment in the stormwater runoff.



**Stormwater Runoff
Pollution Prevention**
A Joint Effort.



MS4 Permit

- We are an urbanized area
 - More people = more urbanization = more potentially polluted stormwater runoff
- Municipal Separate Storm Sewer System (MS4) Permit
 - Mandated by the US EPA under Clean Water Act (and Amendments)
 - Requires us to take extra measures to protect our natural resources
 - Our current permit, COR042008, has several requirements, one of them is training

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ECHCS Grant, State Authorization Training

ECHCS: What We Do to Prevent Stormwater Pollution

Sediment and erosion controls at construction sites



Proper use of silt fencing

- Designed to capture sediment so it does not exit the site during rainfall
- In good condition
- No holes, not falling over



Proper use of curb inlet protection

- Designed to prevent sediment/ other contaminants from entering the storm drain system
- In good condition
- No holes, not pulled back

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ECHCS Statewide Authorization Training

ECHCS: What We Do to Prevent Stormwater Pollution

Post-Construction Best Management Practices



Rain Garden/Retention Pond

- Designed to hold water and filter it before exiting

Porous Paver Parking Lot

- Acts like a field of grass, designed to filter water before exiting.
- Virtually no runoff



Rainwater Cistern

- Collects and filters water from roof, used for vegetation watering

There is more we can do...

What Can You Do?

- Respect and protect our river
 - Don't litter, pick up trash others leave behind
 - Recycle your cans & water bottles
 - Encourage others to do the same
- Good Neighbor Practices
 - Bring back whatever you take to the river (cans, bottles, etc.)
 - Consider use of reusable containers
 - Mesh bags for single-use containers



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ECHO's Stormwater Awareness Training

What Can You Do?

- Report Illegal Dumping
 - Don't throw items or dump chemicals down storm drains
- If you see someone doing it, report it immediately
 - Call the local stormwater manager (GEMS Program Manager)
 - Be aware of your surroundings (address, street names)
 - Try to get a picture if possible
 - Do not pick up materials; they could be hazardous
- Report any illegal activity to either of the contacts below
 - GEMS Program Manager: x2613
 - Industrial Hygiene: x2166
 - VA Police: x5233



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ECHO's Stormwater Awareness Training

What Can You Do?

- Dispose of materials properly
- Pick up after your Pooch
 - Pet waste not disposed of properly can end up in the river
 - Bacteria in waste can make swimmers sick
- Violators could be fined



What Can You Do?

- Volunteer!
 - Earth Day
 - Dumpster Days
 - Keep ECHCS Beautiful Adopt-a-Spot
 - Storm Drain Marker Program



In ECHCS, we keep our
waters clean!



Be on the lookout for Hootie the Owl!



Question 1

Which of the following are permitted to go down a storm drain?

- Leaves
- Biodegradable soap like Simple Green
- Cigarette butts
- Only rainwater

Answer

Which of the following are permitted to go down a storm drain?

- Only rainwater

Question 2

Why do we have to protect the rivers and creeks around ECHCS?

- It's a popular place for swimming, kayaking and tubing & we should protect the river users
- There are animal species and we should respect their habitat
- ECHCS is responsible for managing its stormwater through the MS4 permit
- All of the above

Answer

Why do we have to protect the rivers and creeks around ECHCS?

- All of the above

Question 3

It's raining and you see a can floating down the street and into a storm drain. Where will it go?

- The nearest waterway, a river or creek, untreated and unfiltered
- To the wastewater treatment plant
- It will be treated and filtered then discharged into the nearest waterway

Answer

It's raining and you see a can floating down the street and into a storm drain. Where will it go?

- The nearest waterway, a river or creek, untreated and unfiltered

Question 4

What do you do if you see someone dumping a container of unknown material down a storm drain?

- A. It's ok, this practice is not prohibited; call no one
- B. Call the VA Police/GEMS/Industrial Hygiene
- C. Try to take a picture and know your location so you can properly report
- B and C only

Answer

What do you do if you see someone dumping a container of unknown material down a storm drain?

- B and C only

Questions?

Contact Information:

Ray Marsh
GEMS Program Manager
303-399-8020, ext. 2613
Raymond.Marsh@va.gov

ATTACHMENT VII ECHCS HAZARDOUS MATERIAL SPILL PROCEDURES

See GEMS Program Manager for the ECHCS Spill Prevention Control and Countermeasures Plan (SPCC)